**Listing of claims:**

1. (Previously Presented) A system for measuring temperatures of a device, comprising:

a dual diode system, comprising a first junction diode and a second junction diode wherein the first junction diode and the second junction diode are collocated on a first substrate, the dual diode system having a first terminal that is coupled to a first electrode of the first junction diode, wherein the first electrode of the first junction diode has a first polarity, a second terminal that is coupled to a first electrode of the second junction diode, wherein the first electrode of the second junction diode has the first polarity, and a third terminal that is coupled to second electrodes of the first and second junction diodes, wherein the second electrodes of the first and second junction diodes have a second polarity that is opposite of the first polarity;

a temperature measurement circuit that is formed on a second substrate and that is configured to perform a voltage measurement using only one of the first and second terminals; and

a bias circuit that is configured to bias the third terminal.

2. (Currently Amended) ~~The system of claim 1, wherein the first electrode of the first junction diode comprises an emitter, the first electrode of the second junction diode comprises an emitter, and the second electrodes of the first and second junction diodes each comprise a base~~ A system for measuring temperatures of a device, comprising:

a dual diode system, comprising a first junction diode of a first transistor and a second junction diode of a second transistor; wherein the first transistor and the second transistor are collocated on a first substrate, the first transistor and the second transistor are of a same transistor type, the dual diode system having a first terminal coupled to an emitter of the first transistor, a second terminal coupled to an emitter of the second transistor, and a third terminal coupled in common with a base of the first transistor and a base of the second transistor;

a temperature measurement circuit that is formed on a second substrate and that is configured to perform a voltage measurement using only one of the first and second terminals; and

a bias circuit that is configured to bias the third terminal.

3. (Original) The system of claim 1, wherein the first electrode of the first junction diode comprises a cathode, the first electrode of the second junction diode comprises a cathode, and the second electrodes of the first and second junction diodes each comprise an anode.

4. (Original) The system of claim 1, wherein the bias circuit is formed on the first substrate.

5. (Original) The system of claim 1, wherein the bias circuit is formed on one of the second substrate, a third substrate, and a discrete component.

6. (Original) The system of claim 1, wherein the temperature measurement circuit is configured to perform a voltage measurement using the third terminal.

7. (Previously Presented) The system of claim 1, wherein the temperature measurement circuit is configured to perform a voltage measurement by using only the first terminal in response to two currents applied to the first terminal at different times, and wherein the temperature measurement circuit determines the junction temperature of the first diode.

8. (Previously Presented) A method for measuring the temperature of a device, comprising:

collocating a dual diode system on a first substrate wherein the dual diode system comprises a first terminal that is coupled to a first electrode of a first junction diode, wherein the first electrode of the first junction diode has a first polarity, a second terminal that is coupled to a first electrode of a second junction diode, wherein the first electrode of the second junction diode has the first polarity, and a third terminal that is coupled to second electrodes of the first and second junction diodes, wherein the second electrodes of the first and second junction diodes have a second polarity that is opposite of the first polarity;

forming a temperature measurement circuit on a second substrate;

performing a voltage measurement using only one of the first and second terminals, wherein the voltage measurement is performed using the temperature measurement circuit; and

biasing the third terminal.

9. (Original) The method of claim 8, wherein the first electrode of the first junction diode comprises an emitter, the first electrode of the second junction diode comprises an emitter, and the second electrodes of the first and second junction diodes each comprise a base.

10. (Original) The method of claim 8, wherein the first electrode of the first junction diode comprises a cathode, the first electrode of the second junction diode comprises a cathode, and the second electrodes of the first and second junctions diode each comprise an anode.

11. (Original) The method of claim 8, wherein the biasing the third terminal is performed using a bias circuit that is formed on the first substrate.

12. (Original) The method of claim 8, wherein the bias circuit is formed on one of the second substrate, a third substrate, and a discrete component.

13. (Previously Presented) The method of claim 8, wherein the couplings are connections.

14. (Original) The method of claim 8, wherein the temperature measurement circuit comprises a differential analog-to-digital converter.

15. (Previously Presented) A system for measuring the temperature of a device, comprising:

a dual diode system comprising a first junction diode means and a second junction diode means wherein the first junction diode means and the second junction diode means are collocated on a first substrate wherein the dual diode system comprises a first terminal that is coupled to a first electrode of the first junction diode means, wherein the first electrode of the first junction diode means has a first polarity, a second terminal that is coupled to a first electrode of the second junction diode means, wherein the first electrode of the second junction diode means has the first polarity, and a third terminal that is coupled to second electrodes of the first and second

junction diode means, wherein the second electrodes of the first and second junction diode means have a second polarity that is opposite of the first polarity;

forming a means for measuring a signal on a second substrate;

means for performing a voltage measurement using only one of the first and second terminals, wherein the voltage measurement is performed using the signal measuring means; and

means for biasing the third terminal.

16. (Previously Presented) The system of claim 15, wherein the first electrode of the first junction diode means comprises an emitter, the first electrode of the second junction diode means comprises an emitter, and the second electrodes of the first and second junction diode means each comprise a base.

17. (Previously Presented) The system of claim 15, wherein the first electrode of the first junction diode means comprises a cathode, the first electrode of the second junction diode means comprises a cathode, and the second electrodes of the first and second junctions diode means each comprise an anode.

18. (Previously Presented) The system of claim 15, wherein the means for biasing the third terminal comprises a bias circuit that is formed on the first substrate.

19. (Previously Presented) The system of claim 15, wherein the bias circuit is formed on one of the second substrate, a third substrate, and a discrete component.

20. (Previously Presented) The system of claim 15, wherein the signal measuring means is configured to perform a voltage measurement using different currents on the same junction diode means.